REMARKS / ARGUMENTS

A. General

Claim 1 remains in this application. Claim 1 has been amended

B. Claim Rejections under 35 U.S.C. §112, Second Paragraph

Claim 1 was rejected under 35 U.S.C. §112, second paragraph as being indefinite.. Applicant respectfully submits that claim 1, as amended, particularly points out and distinctly claims the subject matter that Applicant regards as the invention and requests that the examiner reconsider the rejections under 35 U.S.C. §112.

C. Claim Rejections Under 35 U.S.C. §103(a)

Claim 1 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Abbott et al. (U.S. Patent 5,790804) (herein, "Abbott") in view of Osborne (U.S. Patent 5,790,804) (herein, "Osborne").

To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). MPEP §2143.03, 8th Ed. (Rev. 2, 2004). Further, "[o]bviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art." MPEP §2143.01, 8th Ed. (Rev. 2, 2004).

The examiner found that Abbott and Osborne together taught the limitations of claim 1 as originally filed. The examiner found that Abbott teaches a method for improving the internal computer throughput rate of network communicated data comprising: executing communication protocols in an integrated protocol processing loop by having the integrated protocol processing loop perform all protocol data manipulation functions on the data in a single loop on computer word size segments of the data and calculating communication protocol checksums one computer word size of data at a time within the integrated protocol processing loop. The examiner recognized that Abbot fails to disclose transferring network communicated data from a standard network interface device to an application address space with only one physical copying of the data, or that address mapping of the data occurs in response to call functions where the operating system's calls are bypassed. The examiner determined that Osborne teaches these

limitations.

Applicant respectfully submits that the Abbott and Osborne references do not teach or disclose improving the data throughput of a computer that is interoperable with a commercial off-the-shelf (COTS) operating system (OS). Interoperability means that the software library taught by the present application does not require custom, unique, or proprietary hardware or software components. (See, Specification, page 21, para. 42.) Applicant's software library is portable from machine to machine, and accommodates changes in network interfaces and protocols.

Abbott's integrated protocol processing loop, on the other hand, does not teach the use of standard communication protocols and is therefore not interoperable.

Osborne teaches against interoperability:

> Some out of band mechanism, such as a boot-time agreed upon kernel endpoint and connection, is used to arrange allocation of the endpoint and connection in the receiver. (Osborne col. 14, lines 55-58.)

The Osborne system is not interoperable with any known protocol other than Van Eicken and Cornell University's "Active Messages" protocol and is not operable with standard network protocols such as the Internet Protocol (IP), TCP, UDP and XTP. It is not always possible to know the address of the machine that you wish to communicate with. Osborne's system can not communicate over the Internet or any network without always knowing the endpoint application memory and network (i.e., IP) addresses of sender and recipient. Since applications run at random at varying machines at different physical locations, the application memory allocations are random and the memory addresses are randomly assigned by the OS based on availability. There is no general purpose, anytime anywhere communication possible with Osborne's "protocol".

Claim 1, as amended, uses addresses derived from standard network and transport protocols, which provide connection and addressing to any machine at any time without apriori knowledge of specific memory addresses in specific machine at specific network addresses.

Osborne's system requires a second CPU or computing hardware element to perform its network data transfer to the application program memory space when it operates in OS bypass modes and even in other stated configurations:

> In some communication schemes an intelligent network interface, or perhaps a second processor at the receiver **52** (e.g., the communication co-processor in the Intel Paragon) extracts the message from the network **82** and copies the message to the message buffer **74**. The operating system **72** then performs protocol processing. if necessary, in step **108**, then copies the message in step **110** from the message buffer **72** at the receiver **52** to application memory such as endpoint **79**. (Osborne, Col. 7, lines 46-54)

Claim 1, as amended, of the present application recites the following limitations:

> 1. A method for improving the internal computer throughput rate of network communicated data comprising:
>
> integrating a software library with a commercial off-the-shelf (COTS) operating system (OS) of the computer, wherein the software library comprises a network interface unit (NIU) driver and an integrated protocol processing (IPP) loop;
>
> opening the NIU driver in response to a notification that network communicated data directed to an application has been received by a NIU of the computer;
>
> transferring the network communicated data from the NIU of the computer to a COTS OS memory buffer;
>
> mapping an application memory buffer to the COTS OS memory buffer, wherein the mapping is accomplished by the NIU driver;
>
> executing standard communication protocols on the network communicated data to obtain application data, wherein the executing of the standard communication protocols is accomplished using the IPP loop;
>
> transferring the application data to the COTS OS memory buffer; and
>
> processing the application data at the application, wherein the application data is acquired by the application from the application memory buffer.

Claim 1, as amended, invokes the interoperability teachings of the present application through the recitation of the limitation, "integrating a software library with a commercial off-the-shelf (COTS) operating system (OS) of the computer." In addition, the limitation, "executing standard communication protocols on the network communicated data to obtain application data," further limits the claimed invention to use of communication protocols that one skilled in the art would recognize as standard.

Applicant submits that the cited references do not teach or describe these limitations. Claim 1, as amended, is therefore patentable over the cited prior art.

E. Conclusion

In view of the above information and remarks, Applicant respectfully requests

reconsideration of the current rejections. Applicant submits that based on the foregoing, claim 1 (as amended) is allowable over the cited prior art. Applicant further requests that a timely Notice of Allowance be issued in this case. Should any further questions arise concerning this application or in the event the above amendments do not place the application in condition for allowance, Applicant respectfully requests a telephone interview. Attorney for the Applicant may be reached at the number listed below.

Respectfully Submitted,

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